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MSHA V. U.S. STEEL MINING

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September 22, 1986

SECRETARY OF LABOR,  
MINE SAFETY AND HEALTH  
ADMINISTRATION (MSHA)

Docket Nos. WEVA 83-82  
WEVA 83-95

v.  
U.S. STEEL MINING CO., INC.

BEFORE: Backley, Doyle, Lastowka. and Nelson, Commissioners  
DECISION

BY THE COMMISSION:

This consolidated proceeding arises under the Federal Mine Safety and Health Act of 1977, 30 U.S.C. § 801 et seq (1982)(the "Mine Act"), and presents the question of whether two violations of 30 C.F.R. § 70.101, the mandatory respirable dust standard when quartz is present, were of such nature as could significantly and substantially contribute to the cause and effect of a coal mine health hazard. 1/ Following a

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1/ 30 C.F.R. § 70.101 provides:

Respirable dust standard when quartz is present.

When the respirable dust in the mine atmosphere of the active workings contains more than 5 percent quartz, the operator shall continuously maintain the average concentration of respirable dust in the mine atmosphere during each shift to which each miner in the active workings is exposed at or below a concentration of respirable dust, expressed in milligrams per cubic meter of air as measured with an approved sampling device and in terms of an equivalent concentration determined in accordance with § 70.206 (Approved sampling devices; equivalent concentrations) computed by dividing the percent of quartz into the number 10.

Example: The respirable dust associated with a mechanized mining unit or a designated area in a mine contains quartz in the amount of 20%. Therefore, the average concentration of respirable dust in the mine atmosphere associated with that mechanized mining unit or designated area shall be continuously maintained at or below 0.5 milligrams of respirable dust per cubic

meter of air (10/20 = 0.5 mg/ms).

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hearing on the merits, former Commission Administrative Law Judge Richard C. Steffey concluded that the violations were properly designated significant and substantial and assessed civil penalties of \$125 for each violation. 6 FMSHRC 1071 (April 1984)(ALJ). U.S. Steel Mining Co., Inc. ("U.S. Steel") petitioned for discretionary review and, by order dated June 8, 1984, the Commission granted the petition as it related to the two citations charging violations of 30 C.F.R. § 70.101. 2/ For the reasons that follow, we conclude that the judge correctly found that the violations were significant and substantial and we affirm his findings in this regard.

The violations at issue are based upon designated occupation sampling results obtained pursuant to 30 C.F.R. § 70.207 from mechanized mining units ("MMU") in two different U.S. Steel mines. 3/ Citation No. 9917507, issued on September 1, 1982, alleged that the average concentration of respirable dust in the working environment of the designated occupation for MMU 024-0 at the Morton Mine was 1.9 milligrams per cubic meter of air. At the time, the unit was operating under a reduced respirable dust standard of 1.6 mg/ms based upon a previous quartz analysis showing that respirable dust in the mine atmosphere contained 6 percent quartz. The citation was terminated when five respirable dust samples of the working environment of the designated occupation revealed an average respirable dust concentration within 1.6 mg/ms.

Citation No. 9914583, issued on October 20, 1982, alleged that the average concentration of respirable dust in the working environment of the designated occupation for MMU 002-0 at the Shawnee Mine was 1.7 mg/ms. At the time, that unit was operating under a reduced respirable dust standard of 1.4 mg/m based upon a previous quartz analysis showing that respirable dust in the mine atmosphere contained 7 percent quartz. The citation was terminated when five respirable dust samples of the working environment of the designated occupation revealed an average respirable dust concentration within 1.4 mg/ms.

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2/ The Commission declined to review the judge's decision insofar as it related to Docket No. WEVA 82-390-R. Thus, although this docket number has been included in previous Commission orders relating to this case, our decision concerns only Docket Nos. WEVA 83-82 and WEVA 83-95.

3/ 30 C.F.R. § 70.207 requires an operator to take valid respirable dust samples from the designated occupation in each mechanized mining unit on a bimonthly basis. 30 C.F.R. § 70.2(h) in part defines a

"mechanized mining unit" as "a unit of mining equipment including hand loading equipment used for the production of material." On continuous miner units, such as those operated by U.S. Steel, the MMU normally consists of a continuous mining machine, two shuttle cars, and one or two roof bolting machines. Tr. 107. 30 C.F.R. § 70.2(f) defines "designated occupation" as "the occupation on a mechanized mining unit that has been determined by results of respirable dust samples to have the greatest respirable dust concentration." Here, both citations are based upon sample results taken from the continuous miner operator designated occupation.

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At the hearing the Secretary presented medical evidence regarding the nature of the health hazard created by exposure to silica-bearing respirable dust. The medical testimony credited by the judge established that silicosis is a pulmonary disease caused by silica-bearing (quartz) dust retained by the lungs following respiration. 4/ The retained dust causes a scarring process, known as fibrosis. If the fibrosis occurs in the most distal portions of the lungs, the alveoli, nodes of scar tissue develop which compromise the air exchange capacity of the lungs. Damage caused by the scarring is irreversible and there is no known treatment for the disease. Silicosis can develop into a life-threatening respiratory condition known as progressive massive fibrosis. (Such a condition can develop also as the result of coal workers' pneumoconiosis.) Progressive massive fibrosis can develop long after an individual's exposure to quartz-bearing dust has ceased.

A dose-response relationship exists between exposure to quartz-bearing dust and the development of silicosis. The more silica dust an individual is exposed to, the greater the probability of developing silicosis. Based upon the data presently available, however, it is impossible to quantify the physiological effect of infrequent, low-level exposures to silica-bearing dust. However, it is known that there is, in any event, a cumulative dose-response effect from repeated exposures. An increased frequency of exposure and/or an increased concentration of dust increases the risk of developing silicosis.

The judge found that the Secretary had proved the violations of 30 C.F.R. § 70.101 alleged in the two citations and that the violations were significant and substantial. 6 FMSHRC at 1112-16. Concluding that the test for a significant and substantial violation enunciated by the Commission in Cement Division, National Gypsum Co., 3 FMSHRC 822 (April 1981), was applicable to violations of health standards as well as to violations of safety standards, the judge applied the four-phase analysis of the National Gypsum test followed by the Commission in Mathies Coal Co., 6 FMSHRC 1 (January 1984). 5/

First, he found that

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4/ Quartz is a form of silica described as "A crystallized silicon dioxide." Bureau of Mines, U.S. Department of the Interior, Dictionary of Mining, Mineral, and Related Terms 884 (1968).

5/ In National Gypsum, the Commission stated:

[A] violation is of such a nature as could significantly and substantially contribute to the cause and effect of a mine safety or health hazard if, based upon the particular facts surrounding that violation, there exists a reasonable likelihood that the hazard contributed to will result in an injury or illness of a reasonably serious nature.

(footnote cont'd)

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the Secretary proved violations of a mandatory health standard.

6 FMSHRC 1113-14. Second, he found that the violations contributed a measure of danger to a discrete health hazard because breathing excessive quantities of quartz-bearing respirable dust exposes miners to a risk of developing silicosis or pneumoconiosis.

6 FMSHRC at 1114. Third, he determined that there was a reasonable likelihood that the violations contributed to a hazard that would result in injury. *Id.* According to the judge, a preponderance of the evidence showed that each overexposure to quartz-bearing respirable dust adds to the scarring process associated with silicosis so as to produce the lesions associated with progressive massive fibrosis. Finally, he found that there was a reasonable likelihood that the injury in question would be of a reasonably serious nature. 6 FMSHRC at 1114-15. The judge found that the very nature of silicosis and pneumoconiosis defied specific proof of the exact injury that will result from an exposure to respirable dust in excess of the applicable standard. However, once overexposure occurs and the scarring process begins, each overexposure contributes to the cumulative effects until progressive massive fibrosis results. The judge stated that "Then, even if the miner stops working in a coal mine, the disease will continue to cause increasing inability for the lungs to perform their function of purifying the blood and the miner will die prematurely...." 6 FMSHRC at 1115. The judge concluded that the medical testimony at the hearing was scientifically based and that it supported a finding that the violations were significant and substantial.

On review, U.S. Steel challenges only the judge's findings that the violations were "significant and substantial." U.S. Steel maintains that the Secretary failed to establish that there was a reasonable likelihood that the hazard contributed to would result in an injury or illness because the Secretary did not ascribe a

quantitative risk factor to the overexposures.

Although this case presents the first occasion for us to consider whether a violation of 30 C.F.R. § 70.101 is of such nature as could contribute significantly and substantially to the cause and effect of a mine health hazard, we previously have considered the significant and

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Footnote 5 end.

3 FMSHRC at 825.

In *Mathies*, the Commission stated:

In order to establish that a violation of a mandatory safety standard is significant and substantial under *National Gypsum*, the Secretary ... must prove: (1) the underlying violation of a mandatory safety standard; (2) a discrete safety hazard -- that is, a measure of danger to safety -- contributed to by the violation; (3) a reasonable likelihood that the hazard contributed to will result in an injury; and (4) a reasonable likelihood that the injury in question will be of a reasonably serious nature.

6 FMSHRC at 3-4. (footnote omitted).

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substantial nature of respirable dust violations under 30 C.F.R. § 70.100 (the general respirable dust standard for underground coal mines). In *Consolidation Coal Co.*, 8 FMSHRC 890 (June 1986), appeal docketed, No. 86-1403 (D.C. Cir. July 11, 1986), the Commission concluded that the *National Gypsum* significant and substantial analysis, "with certain adaptations appropriate in the context of [an] exposure-related health standard," is applicable in determining whether a violation of 30 C.F.R. § 70.100 is significant and substantial. 8 FMSHRC at 891. The Commission there adapted the elements necessary to support a significant and substantial safety violation to cases involving violations of mandatory health standards and held that the Secretary must prove:

(1) the underlying violation of a mandatory health standard; (2) a discrete health hazard -- a measure of danger to health -- contributed to by the violation; (3) a reasonable likelihood that the health hazard contributed to will result in an illness; and (4) a reasonable likelihood that the illness in question will be of a reasonably serious nature.

*Consol*, 8 FMSHRC at 897. *Consol* was decided after U.S. Steel's petition for discretionary review had been granted. In light of the decision in *Consol*, the Commission afforded the parties leave to file supplemental briefs. The Secretary filed a brief; U.S. Steel declined. The Secretary argues that the Commission's analysis for

determining the significant and substantial nature of a violation of 30 C.F.R. § 70.100(a) is equally applicable for determining the significant and substantial nature of a violation of 30 C.F.R. § 70.101. We agree.

In *Consol* the Commission noted that the statutory text of the Mine Act and its legislative history "reveal[] a clear congressional understanding of the unique nature of exposure-related health hazards of respirable dust and the control of those hazards." 8 FMSHRC at 895. Central to the Commission's decision was recognition that "prevention of pneumoconiosis and other occupational illnesses is a fundamental purpose underlying the Mine Act" *Id* (emphasis in original).

Section 70.101, the respirable dust standard involved in this case, is taken directly from section 205 of the Mine Act, 30 U.S.C. § 845, which, in turn, was carried over without significant change from the 1969 Coal Act, 30 U.S.C. § 801 et seq. (1976) (amended 1977). 6/ These

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6/ Section 205 of the Mine Act provides:

Dust standards in presence of quartz

In coal mining operations where the concentration of respirable dust in the mine atmosphere of any working place contains more than 5 per centum quartz, the Secretary of Health and Human Services shall prescribe an appropriate formula for determining the applicable respirable dust standard under this subchapter for such working place and the Secretary shall apply such formula in carrying out his duties under this chapter.

30 U.S.C. § 845.

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statutory sections set interim mandatory health standards, which the Secretary has adopted. Section 205 of the Mine Act is a more stringent cognate of section 202(b)(2), 30 U.S.C. § 842(b)(2), which requires operators to maintain the average concentration of respirable dust in the mine atmosphere in active workings at or below 2.0 mg/ms. In section 205, however, Congress determined that the increased hazard when more than 5 percent quartz is present in respirable dust requires a lower level of exposure.

Silicosis has been recognized for a long time as a disease associated with coal miners, and the inhalation of silica-bearing dust has been causally linked to the disease. See *Coal Mine Health and Safety: Hearings Before the Subcommittee on Labor of the Committee on Labor and Public Welfare, United States Senate, 91st Cong., 1st Sess., 764 (1969)*; *Coal Mine Health and Safety: Hearings Before the Committee on Education and Labor, House of*

Representative, 91st Cong., 1st Sess., 119, 309, 310, 337 (1969). With cognizance of this hazard, section 102(a)(1) of the Senate bill which became the 1969 Coal Act required that the respirable dust standard be reduced when coal dust contains more than 5 percent quartz and that the applicable dust standard "be determined in accordance with a formula prescribed by the Surgeon General." 7/ The Senate Committee report stated, "Since high quartz content in coal dust ... presents a greater health hazard, the Surgeon General is directed to prescribe the formula to be used in arriving at a dust standard for dust containing more than 5 percent quartz which offers comparable protection to the statutory standards for dust containing 5 percent or less quartz." S. Rep. No. 410, 91st Cong., 1st Sess. 46 (1969) reprinted in Senate Subcommittee on Labor, Committee on Labor and Public Welfare, 94th Cong., 1st. Sess., Part I Legislative History of the Federal Coal Mine Health and Safety Act of 1969, at 172 (1975). It was in complying with this requirement of section 205 the 1969 Coal Act, that the Secretary of Health, Education, and Welfare prescribed, and the Secretary of the Interior adopted, the formula set forth in 30 C.F.R. § 70.101. The formula was developed by the National Institute for Occupational Safety and Health and was based upon Public Health Service studies evaluating the effects of free silica on respiratory health. See 36 Fed. Reg. 4981 (March 16, 1971); U.S. Steel Mining Co. Inc., 5 FMSHRC 46, 50-51 (January 1983)(ALJ). When Congress delegated to the Secretary of Health, Education, and Welfare the authority to prescribe the applicable limit of respirable dust when the quartz content exceeds 5 percent, it intended that exposure level to be the maximum level allowed to achieve its stated goal of

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7/ A companion bill introduced in the House of Representatives contained the same provision but required the Secretary of Health, Education, and Welfare to prescribe the formula. The House provision was adopted at Conference and carried over, without substantive change, to the Mine Act as section 205. Section 205 of the Mine Act was subsequently amended to transfer this function to the Secretary of Health and Human Services.

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preventing disabling respiratory disease. Section 201(b), 30 U.S.C. § 841(b). Further, as stated in Console "Congress clearly intended the full use of the panoply of the Act's enforcement mechanisms to effectuate this Congressional goal, including the designation of a violation as a significant and substantial violation." 8 FMSHRC at 897. Against this background of Congress' clear intent to prevent respirable diseases induced by silica-bearing dust, we next address the four elements of the significant and substantial test as set forth

in Consol.

The first element, the existence of the underlying violation, is not an issue in this case. The judge found that the violations alleged in the citations occurred, and U.S. Steel does not challenge the findings of violations. 6 FMSHRC at 1113-14.

The second element, a measure of danger to health posed by the violation, is established also. Here, in mine atmosphere containing more than 5 percent quartz, miners were exposed to excessive average concentrations of respirable dust. These exposures were at levels higher than those that Congress authorized be established to eliminate the possibility of miners contracting silica-bearing dust induced diseases. In Consol we held that any exposure to respirable dust above the applicable limit was deemed to present a discrete health hazard. 8 FMSHRC at 898. The legislative and regulatory histories referred to above regarding overexposure to respirable dust when quartz is present compel the same conclusion. Therefore, we hold that any overexposure to respirable dust based upon designated occupation sampling results giving rise to a violation of 30 C.F.R. § 70.101 presents a discrete health hazard. By proving the violations at issue in the instant proceeding, the Secretary proved a discrete health hazard contributed to by the violations.

The third element in the formula for determining the significant and substantial nature of an exposure related health standard concerns the reasonable likelihood that the health hazard contributed to will result in an illness. In Consol, the Commission recognized the difficulty of predicting whether or when respiratory disease will develop. 8 FMSHRC at 898. At the same time, the Commission also recognized that Congress established the 2.0 mg/ms respirable dust standard as the best available means of preventing disabling respiratory diseases. *Id.* In light of these considerations, the Commission held:

[G]iven the nature of the health hazard at issue, the potentially devastating consequences for affected miners, and strong concern expressed by Congress for eliminating respiratory illnesses in miners, we hold that if the Secretary proves that an overexposure to respirable dust in violation of section 70.100(a), based upon designated occupation samples, has occurred, a presumption arises that the third element of the significant and substantial

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test -- a reasonable likelihood that the health hazard contributed to will result in an illness -- has been established.

Consol, 8 FMSHRC at 899.

These same considerations are involved in the instant proceeding to prove a violation of section 70.101. Indeed, the nature of the health hazard posed by excessive concentrations of respirable dust containing quartz is in some respects greater than that posed by respirable dust without quartz. The fibrosis associated with silica-bearing dust is irreversible and may continue to develop after exposure has ended. Although the present state of scientific and medical knowledge does not make it possible to determine the precise point at which respirable diseases induced by silica-bearing dust will develop, it is clear that cumulative exposures to silica-bearing dust above the applicable exposure limit are an important risk factor. Accordingly, given the nature of the health hazards at issue, the potentially devastating consequences to affected miners, and the strong concern expressed by Congress for the elimination of occupation-related respiratory illnesses in miners, we hold that where the Secretary proves an overexposure to respirable dust in violation of section 70.101 based upon designated occupation samples, a presumption arises that the third element of the significant and substantial test -- a reasonable likelihood that the hazard contributed to will result in an illness -- is established. The fourth element of the significant and substantial test, a reasonable likelihood that the illness in question will be of a reasonably serious nature is not disputed. Congress found overexposure to respirable dust containing quartz to be serious enough to require a mandatory maximum permissible level of exposure. The judge found that each exposure to excessive quantities of silica-bearing respirable dust can contribute to the cumulative effects of dust-induced fibrosis and lead to an increased inability of the lungs to perform their function of aerating the blood and to premature death. 6 FMSHRC at 1115. The evidence of record provides substantial support for the judge's findings. In *Consol* the Commission further held that, because analysis of the four elements of the significant and substantial test would be essentially the same in each instance in which the Secretary proves a violation of 30 C.F.R. § 70.100(a), proof of a violation gives rise to a presumption that the violation is significant and substantial. 8 FMSHRC at 899. We conclude that a similar presumption is appropriate when the Secretary proves a violation of 30 C.F.R. § 70.101. We further hold that, as with a violation of section 70.100(a), the presumption can be rebutted by the operator by establishing that miners in the designated occupation in fact were not exposed to the excessive concentration of respirable dust, e.g., through the use of personal protective equipment. See 8 FMSHRC at 899. In the instant proceeding, there is no evidence that the miners placed at risk by the subject violations were not exposed to excessive

levels of silica-bearing respirable dust.

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Accordingly, we conclude that the administrative law judge's findings that U.S. Steel's violations of the mandatory respirable dust standard at issue were of such nature as could contribute significantly and substantially to the cause and effect of a mine health hazard are supported by substantial evidence of record.

Therefore, the judge's decision is affirmed. 8/

Richard V. Backley, Commissioner

Joyce a. Doyle, Commissioner

James A. Lastowka, Commissioner

L. Clair Nelson, Commissioner

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8/ Chairman Ford did not participate in the consideration or disposition of this matter.

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